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EXAMINER	
MILORD, MARCEAU	
ART UNIT	**PAPER NUMBER**
2682	11

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/692,661	RAEL ET AL.	
	Examiner	Art Unit	
	Marceau Milord	2682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 24 February 2004.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) 1-93 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-93 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-8, 15-22, 29-30, 35-42, 48-93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al (US Patent No 6366622 B1) in view of Reeser et al (US Patent No 5856763).

Regarding claims 1 and 5, Brown et al discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), comprising: a first resonator having a first tuning input (col. 8, lines 8-36; col. 10, lines 12-50); and a second resonator coupled to the first resonator (fig. 6; col. 11, lines 29-60; col. 15, line 47- col. 16, line 8; col. 17, lines 5-53; col. 31, lines 1-25).

However, Brown et al does not specifically disclose the feature of a first resonator as a function of a first current applied to the first tuning input; and a second resonator having a second tuning input to tune the second resonator as a function of a second current applied to the second tuning input.

On the other hand, Reeser et al, from the same field of endeavor, discloses a voltage-controlled oscillator operable on two widely separated frequency bands. The two operable frequency modes are controlled by changing base bias voltages on at least two transistors with commonly connected emitters. A base circuit of each transistor is connected to an independent resonator and tuning element and shares a common feedback reactance. Furthermore, Reeser shows in figure 1, two bases 14 and 16 that are coupled with respective first and second resonators 26, 28, which are designed to resonate at a predetermined frequency. Each resonator 26, 28 are operable at a different frequency band. The resonator 28 also includes a voltage variable reactance element such as a varactor 32 which, during operation of the oscillator, is used to tune the resonator to particular frequency channels within the operable frequency bands (col. 2, line 59- col. 3, line 50; col. 7, line 43- col. 8, line14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Reeser to the system of Brown in order to vary the resonance frequency of the resonators and the strength of their coupling.

Claims 2-4 contain similar limitations addressed in claim 1, and therefore are rejected under a similar rationale.

Regarding claim 6, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the first transconductance cell has a digitally programmable variable gain (col. 24, lines 33-67).

Regarding claim 7, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the second transconductance cell has a digitally programmable variable gain (col. 30, line 36- col. 31, line 66).

Regarding claim 8, Brown et al as applied to claim 5 above differs from claim 8 in the present invention, in that Brown et al fails to disclose the first resonator is fed back to the first tuning input, and the output of the second resonator is fed back to the second tuning input.

However, Reeser et al, from the same field of endeavor, discloses a voltage-controlled oscillator operable on two widely separated frequency bands. The two operable frequency modes are controlled by changing base bias voltages on at least two transistors with commonly connected emitters. A base circuit of each transistor is connected to an independent resonator and tuning element and shares a common feedback reactance. Furthermore, Reeser shows in figure 1, two bases 14 and 16 that are coupled with respective first and second resonators 26, 28, which are designed to resonate at a predetermined frequency. Each resonator 26, 28 are operable at a different frequency band. The resonator 28 also includes a voltage variable reactance element such as a varactor 32 which, during operation of the oscillator, is used to tune the resonator to particular frequency channels within the operable frequency bands (col. 2, line 59- col. 3, line 50; col. 7, line 43- col. 8, line14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Reeser to the system of Brown in order to vary the resonance frequency of the resonators and the strength of their coupling.

Regarding claims 15, 19, 22, Brown et al discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), comprising: a first resonator (fig. 6) having a first tuning input (col. 8, lines 8-36; col. 10, lines 12-50); first control means for controlling a first current applied to the first resonator to tune the first resonator (fig. 6; col. 11, lines 29-60; col. 15, line 47- col. 16, line 8; col. 17, lines 5-53; col. 31, lines 1-25).

However, Brown et al does not specifically disclose the feature of a second resonator coupled to the first resonator, the second resonator having a second tuning input; a second control means for controlling a second current applied to the second resonator to tune the second resonator.

On the other hand, Reeser et al, from the same field of endeavor, discloses a voltage-controlled oscillator operable on two widely separated frequency bands. The two operable frequency modes are controlled by changing base bias voltages on at least two transistors with commonly connected emitters. A base circuit of each transistor is connected to an independent resonator and tuning element and shares a common feedback reactance. Furthermore, Reeser shows in figure 1, two bases 14 and 16 that are coupled with respective first and second resonators 26, 28, which are designed to resonate at a predetermined frequency. Each resonator 26, 28 are operable at a different frequency band. The resonator 28 also includes a voltage variable reactance element such as a varactor 32 which, during operation of the oscillator, is used to tune the resonator to particular frequency channels within the operable frequency bands (col. 2, line 59- col. 3, line 50; col. 7, line 43- col. 8, line14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Reeser to the system of Brown in order to vary the resonance frequency of the resonators and the strength of their coupling.

Claims 16-18 contain similar limitations addressed in claim 15, and therefore are rejected under a similar rationale.

Regarding claim 20, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the first transconductance cell comprises first programming means for digitally programming gain (col. 24, lines 33-67).

Regarding claim 21, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the second transconductance cell comprises second programming means for digitally programming gain (col. 30, line 36- col. 31, line 66).

Regarding claims 29-34, Brown et al discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), comprising: a first resonator (fig. 6) having a first tuning input and a first output (col. 8, lines 8-36; col. 10, lines 12-50); a second transconductance cell coupled between the second output and the first tuning input; a third transconductance cell coupled between the first output and the first tuning input; and a fourth transconductance cell coupled between the second output and the second tuning input (fig. 6; col. 11, lines 29-60; col. 15, line 47- col. 16, line 8; col. 17, lines 5-53; col. 31, lines 1-25).

However, Brown et al does not specifically disclose the feature of a second resonator having a second tuning input and a second output.

On the other hand, Reeser et al, from the same field of endeavor, discloses a voltage-controlled oscillator operable on two widely separated frequency bands. The two operable frequency modes are controlled by changing base bias voltages on at least two transistors with commonly connected emitters. A base circuit of each transistor is connected to an independent resonator and tuning element and shares a common feedback reactance. Furthermore, Reeser shows in figure 1, two bases 14 and 16 that are coupled with respective first and second resonators 26, 28, which are designed to resonate at a predetermined frequency. Each resonator

26, 28 are operable at a different frequency band. The resonator 28 also includes a voltage variable reactance element such as a varactor 32 which, during operation of the oscillator, is used to tune the resonator to particular frequency channels within the operable frequency bands (col. 2, line 59- col. 3, line 50; col. 7, line 43- col. 8, line14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Reeser to the system of Brown in order to vary the resonance frequency of the resonators and the strength of their coupling.

Regarding claims 35-39, Brown et al discloses a transceiver (figs. 4-6), comprising: a current controlled oscillator including a first resonator having a first tuning input to tune the first resonator as a function of a first current applied to the first tuning input (col. 8, lines 8-36; col. 10, lines 12-50); and a second resonator coupled to the first resonator; and a controller having a first control to control the first current to the first tuning input, and a second control to control the second current to the second tuning input (fig. 6; col. 11, lines 29-60; col. 15, line 47- col. 16, line 8; col. 17, lines 5-53; col. 31, lines 1-25).

However, Brown et al does not specifically disclose the feature of a second resonator having a second tuning input to tune the second resonator as a function of a second current applied to the second tuning input.

On the other hand, Reeser et al, from the same field of endeavor, discloses a voltage-controlled oscillator operable on two widely separated frequency bands. The two operable frequency modes are controlled by changing base bias voltages on at least two transistors with commonly connected emitters. A base circuit of each transistor is connected to an independent resonator and tuning element and shares a common feedback reactance. Furthermore, Reeser

shows in figure 1, two bases 14 and 16 that are coupled with respective first and second resonators 26, 28, which are designed to resonate at a predetermined frequency. Each resonator 26, 28 are operable at a different frequency band. The resonator 28 also includes a voltage variable reactance element such as a varactor 32 which, during operation of the oscillator, is used to tune the resonator to particular frequency channels within the operable frequency bands (col. 2, line 59- col. 3, line 50; col. 7, line 43- col. 8, line14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Reeser to the system of Brown in order to vary the resonance frequency of the resonators and the strength of their coupling.

Regarding claim 40, Brown et al as modified discloses a transceiver (figs. 4-6); wherein the first transconductance cell has a digitally programmable variable gain (col. 24, lines 33-67).

Regarding claim 41, Brown et al as modified discloses a transceiver (figs. 4-6); wherein the second transconductance cell has a digitally programmable variable gain (col. 30, line 36- col. 31, line 66).

Claim 42 contains similar limitations addressed in claim 35, and therefore is rejected under a similar rationale.

Regarding claims 48-56, Brown et al discloses a method of tuning an oscillator, comprising: converting an output of a first resonator to a first current; tuning a first resonator as a function of the second current (fig. 6; col. 11, lines 29-60; col. 15, line 47- col. 16, line 8; col. 17, lines 5-53; col. 31, lines 1-25).

However, Brown et al does not specifically disclose the steps of converting an output of a second resonator to a second current; and tuning the second resonator as a function of the first current.

On the other hand, Reeser et al, from the same field of endeavor, discloses a voltage-controlled oscillator operable on two widely separated frequency bands. The two operable frequency modes are controlled by changing base bias voltages on at least two transistors with commonly connected emitters. A base circuit of each transistor is connected to an independent resonator and tuning element and shares a common feedback reactance. Furthermore, Reeser shows in figure 1, two bases 14 and 16 that are coupled with respective first and second resonators 26, 28, which are designed to resonate at a predetermined frequency. Each resonator 26, 28 are operable at a different frequency band. The resonator 28 also includes a voltage variable reactance element such as a varactor 32 which, during operation of the oscillator, is used to tune the resonator to particular frequency channels within the operable frequency bands (col. 2, line 59- col. 3, line 50; col. 7, line 43- col. 8, line14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Reeser to the system of Brown in order to vary the resonance frequency of the resonators and the strength of their coupling.

Regarding claims 57-63, Brown et al discloses a method of tuning an oscillator having a tuning range over a tuning frequency (col. 10, lines 17-50), the tuning frequency being divided into a plurality of frequency bands, the method comprising: generating a first digital word (col. 11, line 29- col. 12, line 58); selecting one of the frequency bands with the first digital word; generating a second digital word; and tuning the oscillator to an operating frequency within the

selected frequency bands with the second digital word (col. 15, line 47- col. 16, line 8; col. 16, line 62- col. 17, line 53; col. 31, lines 1-66).

However, Brown et al does not specifically disclose the feature of a second resonator having a second tuning input, a second resonator output, and feedback the second resonator output to the second tuning input as a function of the first digital word.

On the other hand, Reeser et al, from the same field of endeavor, discloses a voltage-controlled oscillator operable on two widely separated frequency bands. The two operable frequency modes are controlled by changing base bias voltages on at least two transistors with commonly connected emitters. A base circuit of each transistor is connected to an independent resonator and tuning element and shares a common feedback reactance. Furthermore, Reeser shows in figure 1, two bases 14 and 16 that are coupled with respective first and second resonators 26, 28, which are designed to resonate at a predetermined frequency. Each resonator 26, 28 are operable at a different frequency band. The resonator 28 also includes a voltage variable reactance element such as a varactor 32 which, during operation of the oscillator, is used to tune the resonator to particular frequency channels within the operable frequency bands (col. 2, line 59- col. 3, line 50; col. 7, line 43- col. 8, line14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Reeser to the system of Brown in order to vary the resonance frequency of the resonators and the strength of their coupling.

Claims 64-75 are similar in scope to claims 57-63;and therefore are rejected under a similar rationale.

Regarding claims 76-81, 87-88, Brown et al discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), having a tuning range over a tuning frequency, the tuning frequency being divided into a plurality of frequency bands (col. 10, lines 17-50), the oscillator comprising: selection means for selecting one of the frequency bands as a function of a first digital word (col. 11, line 29- col. 12, line 58); and tuning means for tuning the oscillator to an operating frequency within the selected frequency bands as a function of a second digital word (col. 15, line 47- col. 16, line 8; col. 16, line 62- col. 17, line 53; col. 31, lines 1-66).

However, Brown et al does not specifically disclose the feature of a second resonator having a second tuning input to tune the second resonator as a function of a second current applied to the second tuning input.

On the other hand, Reeser et al, from the same field of endeavor, discloses a voltage-controlled oscillator operable on two widely separated frequency bands. The two operable frequency modes are controlled by changing base bias voltages on at least two transistors with commonly connected emitters. A base circuit of each transistor is connected to an independent resonator and tuning element and shares a common feedback reactance. Furthermore, Reeser shows in figure 1, two bases 14 and 16 that are coupled with respective first and second resonators 26, 28, which are designed to resonate at a predetermined frequency. Each resonator 26, 28 are operable at a different frequency band. The resonator 28 also includes a voltage variable reactance element such as a varactor 32 which, during operation of the oscillator, is used to tune the resonator to particular frequency channels within the operable frequency bands (col. 2, line 59- col. 3, line 50; col. 7, line 43- col. 8, line14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of

Reeser to the system of Brown in order to vary the resonance frequency of the resonators and the strength of their coupling.

Regarding claim 82, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the first transconductance cell comprises first programming means for digitally programming gain in response to the second digital word (col. 24, lines 33-67).

Regarding claim 83, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the second transconductance cell comprises second programming means for digitally programming gain in response to the second digital word (col. 30, line 36-col. 31, line 66).

Regarding claim 84, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the first and second programming means each comprises a current source (col. 11, lines 29-41; col. 30, lines 15-65).

Regarding claim 85, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the second digital word associated with the first programming means is different from the second digital word associated with the second programming means (col. 30, lines 15-65).

Regarding claim 86, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the second digital word associated with the first programming means is the same as the second digital word associated with the second programming means (col. 30, lines 15-65).

Regarding claim 89, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the first transconductance cell comprises first programming means for digitally programming gain in response to the first digital word (col. 24, lines 33-67).

Regarding claim 90, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the second transconductance cell comprises second Programming means for digitally programming gain in response to the first digital word (col. 30, line 36- col. 31, line 66).

Regarding claim 91, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the first and second programming means each comprises a current source (col. 11, lines 29-41; col. 30, lines 15-65).

Regarding claim 92, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the first digital word associated with the first programming means is different from the first digital word associated with the second programming means (col. 30, line 36- col. 31, line 66).

Regarding claim 93, Brown et al as modified discloses an oscillator (116 of fig. 4; 208 of fig. 5 or 248 of fig. 6), wherein the first digital word associated with the first programming means is the same as the first digital word associated with the second programming means (col. 30, lines 14-49; col. 24, lines 33-67).

3. Claims 9-14, 23-28, 31-34, 43-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al (US Patent No 6366622 B1) in view of Reeser et al (US Patent No 5856763) as applied to claims 1, 15, 35 above, and further in view of Kerth et al (US Patent No 6148048).

Regarding claims 9-14, Brown and Reeser disclose everything claimed as explained above except the features of a third transconductance cell comprises a third gain control input responsive to a third digital word to program a gain thereof, and the fourth transconductance cell comprises a fourth gain control input responsive to a fourth digital word to program a gain thereof.

However, Kerth et al discloses a receive path implementation for an intermediate frequency transceiver that provides increased signal processing integrity and accuracy. Furthermore, Kerth et al shows in figure 9, an amplifier 820, which includes a first gain stage 902 having a transconductance gm1, and a second gain stage 904 having a transconductance gm2. The feedback impedance 822 is implemented with feedback capacitance 914. Note that, this circuit can have a plurality of transconductance (figs. 1-4; col. 3, line 12- col. 4, line 61; col. 8, lines 24- col. 8, line 58; col. 9, line 48- col. 10, line 65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique Kerth to the modified system of Brown and Reeser in order to include a voltage controlled oscillator in the system which can provide a separate feedback signal operable at both desired frequency bands to a phase detector via a first divider.

Regarding claims 23-28, Brown and Reeser disclose everything claimed as explained above except the features of a the third transconductance cell comprises a third programming means for programming a gain thereof in response to a third digital word, and the fourth transconductance cell comprises a fourth programming means for programming the gain thereof in response to a fourth digital word.

However, Kerth et al discloses a receive path implementation for an intermediate frequency transceiver that provides increased signal processing integrity and accuracy. Furthermore, Kerth et al shows in figure 9, an amplifier 820, which includes a first gain stage 902 having a transconductance gm1, and a second gain stage 904 having a transconductance gm2. The feedback impedance 822 is implemented with feedback capacitance 914. Note that, this circuit can have a plurality of transconductance (figs. 1-4; col. 3, line 12- col. 4, line 61; col. 8, lines 24- col. 8, line 58; col. 9, line 48- col. 10, line 65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Kerth to the modified system of Brown and Reeser in order to include a voltage controlled oscillator in the system which can provide a separate feedback signal operable at both desired frequency bands to a phase detector via a first divider.

Regarding claims 31-34, Brown and Reeser disclose everything claimed as explained above except the features of a third transconductance cell comprises a third gain control input responsive to a third digital word to program a gain thereof, and the fourth transconductance cell comprises a fourth gain control input responsive to a fourth digital word to program a gain thereof.

However, Kerth et al discloses a receive path implementation for an intermediate frequency transceiver that provides increased signal processing integrity and accuracy. Furthermore, Kerth et al shows in figure 9, an amplifier 820, which includes a first gain stage 902 having a transconductance gm1, and a second gain stage 904 having a transconductance gm2. The feedback impedance 822 is implemented with feedback capacitance 914. Note that, this circuit can have a plurality of transconductance (figs. 1-4; col. 3, line 12- col. 4, line 61; col.

8, lines 24- col. 8, line 58; col. 9, line 48- col. 10, line 65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique Kerth to the modified system of Brown and Reeser in order to include a voltage controlled oscillator in the system which can provide a separate feedback signal operable at both desired frequency bands to a phase detector via a first divider.

Regarding claims 43-47, Brown and Reeser disclose everything claimed as explained above except the features of a third transconductance cell comprises a third gain control input responsive to a third digital word to program a gain thereof, and the fourth transconductance cell comprises a fourth gain control input responsive to a fourth digital word to program a gain thereof.

However, Kerth et al discloses a receive path implementation for an intermediate frequency transceiver that provides increased signal processing integrity and accuracy. Furthermore, Kerth et al shows in figure 9, an amplifier 820, which includes a first gain stage 902 having a transconductance gm1, and a second gain stage 904 having a transconductance gm2. The feedback impedance 822 is implemented with feedback capacitance 914. Note that, this circuit can have a plurality of transconductance (figs. 1-4; col. 3, line 12- col. 4, line 61; col. 8, lines 24- col. 8, line 58; col. 9, line 48- col. 10, line 65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique Kerth to the modified system of Brown and Reeser in order to include a voltage controlled oscillator in the system which can provide a separate feedback signal operable at both desired frequency bands to a phase detector via a first divider.

Response to Arguments

4. Applicant's arguments filed on 2-24-2004 have been fully considered but they are not persuasive.

Applicant's representative argues that Brown does not teach a first resonator and a second resonator.

However, Reeser et al teaches a voltage controlled operable on two widely separated frequency bands. Reeser shows in figure 1, a multi-frequency oscillator which is a dual voltage controlled oscillator with each resonant circuit 26, 28 being coupled with a respective variable reactance element 30, 32, such as a voltage variable capacitor, each of which is responsive to a tuning signal via an RF choke. Furthermore, the resonator 28 also includes a voltage variable reactance element such as a varactor 32, which is used to tune the resonator to particular frequency channels within the operable frequency band. The resonator 26 also contains a varactor 30, which is used to tune the resonator to particular channels within the operable frequency bands (figs. 1-2; figs. 5-6col. 3, lines 7-45; col. 4, lines 11-6). In addition, the frequency synthesizer 260 includes a voltage-controlled oscillator, which provides feedback signal from the local oscillator signal 262 to a phase detector via a first divider. The reference oscillator 290 also provides a reference signal 272 to the phase detector via a second divider (figs.9-11; col.7, line 43- col. 8, line 45).

Applicant's representative also argues that Brown and Reeser cannot be properly combined.

The Examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed

combination of primary and secondary references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken, as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art, rather that by their specific disclosure. In re Bozec, 163 USPQ 545 (CCPA) 1969. Therefore, the Examiner still believes these references are properly combined.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 703-306-3023. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 703-308-6739. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Examiner

Art Unit 2682